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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,512	12/19/2003	Chi-Cheng Lin	ACMP0125USA	1511
27765	7590	09/01/2004	EXAMINER	
NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)			JEAN PIERRE, PEGUY	
P.O. BOX 506			ART UNIT	PAPER NUMBER
MERRIFIELD, VA 22116			2819	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,512

Applicant(s)

LIN, CHI-CHENG

Examiner

Peguy JeanPierre

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/19/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5 and 7-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (USP 6,011,503).

Lee et al. disclose in Figure 4 a converting module for converting a first analog voltage to digital output value. The system comprises a comparator unit (CP4_{1,2}) that compares the first analog voltage (IN) to a threshold voltage namely $V_{ref}/2$ to a first group of digital data that contains at least one digit; a subtracting circuit (42) generates a second analog voltage by subtracting the threshold voltage $V_{ref}/2$ from the first analog voltage (IN) if the comparison indicates that the first analog voltage is greater than the threshold voltage $V_{ref}/2$ (see col. 4, lines 48-62). The second analog voltage produces by the subtracting unit is converted to a second group of digits via encoder (43). The first group of digits and the second group of digits are concatenated (2) to form the digital output value.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) (pp 1-4; Fig. 1) in view of Lee (USP 6,011,503).

The APA discloses in Figure 1 a touch pad for detecting the location of a point of contact with a surface that comprises a touch input transducer for converting the location of the point into analog transducer voltages, a converting module (50) converting the analog transduced voltage into a set of digital codes representing the location of the point upon the surface. The APA does not disclose a converting module that comprises a comparator that compares the analog signal to a threshold voltage, a subtracting circuit that subtracts the analog signal from the threshold voltage based on the comparison result.

Lee et al. disclose in Figure 4 a converting module that comprises a comparator unit (CP4_{1, 2}) that compares an analog voltage (IN) to a threshold voltage, namely $V_{ref}/2$ to generate a comparison result, a subtracting circuit (42) that subtracts the threshold voltage from the analog voltage based on the comparison result and analog to digital converter that converts the analog voltage to digital output voltage. The system of Lee is designed to increase the speed of the converter in electronic devices. Therefore, it would have been obvious to one having ordinary skill in the art would have been motivated to replace the ADC

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converter of the APA by the converter module of Lee, apply the transduced voltage of the APA to the input of the converter of Lee for the additional benefit of increasing the speed and improving the accuracy and resolution so critical in digital electronic communication systems.


Allowable Subject Matter

6. Claims 2, 3, 5, 7-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taketoshi (USP 6,411,241), Tai (USP 5,973,632) disclose analog to digital converter having extended resolution; Ong et al. disclose a touchpad device circuit having a converter module.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peguy JeanPierre whose telephone number is (571) 272-1803. The examiner fax phone number is (571) 273-1803.


Peguy JeanPierre
Primary Examiner